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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/810,901	03/29/2004	Ueli Breitschmid	2360-0406P	1090
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BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER CHIN, RANDALL E	
			ART UNIT 3723	PAPER NUMBER
			NOTIFICATION DATE 10/30/2007	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

## Office Action Summary

Application No.

10/810,901

Applicant(s)

BREITSCHMID, UELI

Examiner

Randall Chin

Art Unit

3723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2007 and 25 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,6,9,14,16 and 18-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,6,9,14,16 and 18-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 4, 6, 9, 14 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 0 800 781 (hereinafter EPO '781).

EPO '781 discloses an interdental brush comprising two wire sections formed of austenitic steel and having a diameter of 0.3 mm or less (p. 3, lines 21-22 and 27-28, for example), and filaments retained between the two wire sections which are twisted with one another (Figs. 1-3; p. 2, lines 5-8), wherein the austenitic steel includes less than 0.05% nickel by weight. Specifically, EPO '781 teaches in "first," "second," and "third" aspects of the invention (p. 2, line 54 to p. 3, line 8) examples where nickel is **not even included** in the brush wire thus meeting the broad claim limitation "less than 0.05% nickel by weight." Here, EPO '781 explicitly recites that the brush wire contains "**at least**" iron, chromium, manganese and nitrogen (emphasis added) and the nickel amount would be 0 wt% (i.e., zero). Therefore, **nickel is never required** in the composition for the brush wire. Note also, in subsequent "aspects" of the invention (e.g., "fourth," "fifth," etc. on p. 3, lines 9-51), **nickel is included/mentioned** in the brush wire composition. Claims 1-3 of EPO '781 similarly teaches the aforementioned brush wire

Art Unit: 3723

which is void of any nickel material. The fact that **nickel** is never explicitly mentioned in the recited composition or combination of the first, second or third aspects of the invention is an indication that *even if nickel* were present in such composition or combination, as Applicant alleges, such nickel amounts would be so minimal or infinitesimal and so close to zero as to render the nickel not worthy of mention or of nil effect in the first, second or third aspects of the invention.

Alternatively with respect to claim 1, EPO '781 teaches specifically in a "sixth" aspect of the invention that the brush wire contains nickel "less than 1.0 wt%" (p. 3, lines 20-25, for example) which is deemed to anticipate the recited limitation in claim 1 of "less than 0.05% nickel by weight" with "sufficient specificity" (see MPEP 2131.03 II.)

As for claim 2, EPO '781 teaches a wire diameter of 0.15 to 0.35 mm (p. 3, lines 27-28) and which meets the limitation of the two wire sections having a diameter of more than 0.15 mm.

As for claims 1, 4 and 9, EPO '781 is already concerned with providing adequate tensile strength to avoid breakage (p. 2, lines 38-40 and p. 3, lines 56-58) where the wire has tensile strength of not less than 40kfg/mm squared which meets the claimed limitations of "1000 N/mm<sup>2</sup> or more" or "1200 N/mm<sup>2</sup> or less".

As for claim 6, 14 and 16 reciting that the wire sections are stretched or drawn out, such a recitation appears to be drawn to method step not germane to patentability in apparatus claims.

Art Unit: 3723

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2, 4, 6, 9, 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over EPO '781.

As already disclosed above, EPO '781 discloses an interdental brush comprising two wire sections formed of austenitic steel and having a diameter of 0.3 mm or less (p. 3, lines 21-22 and 27-28, for example), and filaments retained between the two wire sections which are twisted with one another (Figs. 1-3; p. 2, lines 5-8).

Even assuming *arguendo* that the EPO '781 disclosure of "nickel content is less than 1.0 wt%" fails to teach with "sufficient specificity" (in accordance with MPEP 2131.03 II.) that the austenitic steel includes "less than 0.05% nickel by weight", EPO '781 specifically teaches in "first," "second," and "third" aspects of the invention (p. 2, line 54 to p. 3, line 8) examples where nickel is **not even included** in the brush wire. EPO '781 explicitly recites that the brush wire contains "**at least**" iron, chromium, manganese and nitrogen (emphasis added) and the nickel amount would be 0 wt% (i.e., zero). Therefore, nickel is never required in the composition for the brush wire. Note also, in subsequent "aspects" of the invention (e.g., "fourth," "fifth," etc. on p. 3, lines 9-51), nickel is included/required in the brush wire composition. Claims 1-3 of EPO '781

Art Unit: 3723

similarly teaches the aforementioned brush wire which is void of any nickel material.

Therefore, it would have been obvious to one of ordinary skill in the art to have modified EPO '781 by providing an amount of nickel in the brush wire **anywhere** from 0 wt% (i.e., zero) **all the way up to 1.0 wt %** (since EPO '781 already explicitly teaches nickel in an amount "less than 1.0 wt%" at p. 3, lines 20-25, for example, and also teaches examples where nickel is **not even included** in the brush wire composition at p. 2, line 54 to p. 3, line 8 and therefore, 0.05% nickel by weight is included or encompassed by this range) in order to provide optimal characteristics for the brush wire in terms of tensile strength, stability, prolonged life and usage, nontoxic features, etc and thus only the expected results would be obtained. This would include the specific value of 0.05% nickel.

Further, absent any crucial unexpected results or criticality for the specific claimed limitation "less than 0.05% nickel by weight", such claimed limitation is met by EPO '781 as just explained. It should be noted that Applicant's specification on p. 2, lines 16-27 recites that "[u]sing nickel-free wire, in addition, increases the biocompatibility of the brush, without any protective coatings being necessary." However, such a recitation is not deemed an unexpected result for the specific claimed limitation "less than 0.05% nickel by weight". The specification is devoid of any significant criticality or unexpected results for the claimed limitation "less than 0.05% nickel by weight".

Art Unit: 3723

As for claim 2, EPO '781 teaches a wire diameter of 0.15 to 0.35 mm (p. 3, lines 27-28) and which meets the limitation of the two wire sections having a diameter of more than 0.15 mm.

As for claims 1, 4 and 9, EPO '781 is already concerned with providing adequate tensile strength to avoid breakage (p. 2, lines 38-40 and p. 3, lines 56-58) where the wire has tensile strength of not less than 40kfg/mm squared which meets the claimed limitations of "1000 N/mm<sup>2</sup> or more" or "1200 N/mm<sup>2</sup> or less". In any case, it would have been obvious to one of ordinary skill in the art to have optimized the tensile strength range of the wire sections as claimed since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. Further, only reasonable expected results would be obtained. Moreover, the EPO '781 reference specifically recites that the interdental brush wire has high mechanical properties of the wire such as tensile strength and that the properties are well balanced and improved in terms of hardness, spring properties and workability as well as durability against bucking or break which are required for interdental brush wire (see p. 4, lines 7-12 and p. 16, lines 27-32). Thus, one of ordinary skill in the art would recognize a reasonable expectation of success by selecting the tensile strength range as claimed.

As for claim 6, 14 and 16 reciting that the wire sections are stretched or drawn out, such a recitation appears to be drawn to method step not germane to patentability in apparatus claims.

Art Unit: 3723

5. Claims 18-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over EPO '781 in view of Japan 8-308637 (hereinafter Japan '637).

In order to avoid redundancy, all of the Examiner's reasoning and explanations based on EPO '781 above are being incorporated herein for purposes of rejecting claim 18. With the exception of specific elements within the austenitic steel now being claimed, claim 18 is similar to claim 1. EPO '781 teaches among the disclosed "aspects" or embodiments all of the elements of the austenitic steel (i.e., manganese, nitrogen, carbon, chromium, molybdenum, silicon, phosphorus, iron, and nickel; see p. 2, line 49 to p. 3, line 51) in some combination or another with the exception of titanium. The reference to Japan '637 teaches an interdental brush which can include a titanium nickel element for the austenitic steel. It would have been obvious to one of ordinary skill in the art to have modified the EPO '781 interdental brush such that the austenitic steel contains all of the claimed elements, i.e., manganese, nitrogen, carbon, chromium, molybdenum, silicon, phosphorus, iron, nickel, and titanium as suggested by Japan '637, since **all of these elements are well known and utilized within austenitic steel for interdental brushes** and all of the elements contribute to optimal characteristics for the brush wire in terms of tensile strength, stability, prolonged life and usage, nontoxic features and only the expected results would be obtained.

As for claims 18, EPO '781 is already concerned with providing adequate tensile strength to avoid breakage (p. 2, lines 38-40 and p. 3, lines 56-58) where the wire has tensile strength of not less than 40kfg/mm squared which meets the claimed limitation of "1000 N/mm<sup>2</sup> or more". In any case, it would have been obvious to one of ordinary skill

Art Unit: 3723

in the art to have optimized the tensile strength range of the wire sections as claimed since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. Further, only reasonable expected results would be obtained. Moreover, the EPO '781 reference specifically recites that the interdental brush wire has high mechanical properties of the wire such as tensile strength and that the properties are well balanced and improved in terms of hardness, spring properties and workability as well as durability against bucking or break which are required for interdental brush wire (see p. 4, lines 7-12 and p. 16, lines 27-32). Thus, one of ordinary skill in the art would recognize a reasonable expectation of success by selecting the tensile strength range as claimed.

As for the specific percentages by weight in proportion of chromium, manganese, nitrogen, molybdenum, carbon, silicon, phosphorus, and titanium in the steel being recited throughout claims 19 through 29, one of ordinary skill in the art would find it obvious to select the optimal percentages in terms of tensile strength, stability, processing, prolonged life and usage, and nontoxic features. **All of the recited elements are already known to be used in austenitic steel, more particularly, in interdental wire brushes as taught by EPO '781 and Japan '637.** Further, absent any crucial unexpected results or criticality for these specific percentages by weight in proportion, such claimed limitations are deemed met by EPO '781 and Japan '637. Further, there is no indication of any criticality or unexpected results for these well known elements used in the austenitic steel in their specifically claimed percentages or proportions in claims 18 through 29 or in the specific combination recited in claim 18.

### ***Conclusion***

6. Applicant's arguments filed 06 August 2007 have been fully considered but they are not persuasive.

As for Applicant's arguments pertaining to the § 102(b) rejection, as previously stated, EPO '781 is already concerned with providing adequate tensile strength to avoid breakage (p. 2, lines 38-40 and p. 3, lines 56-58) where the wire has tensile strength of not less than 40kgf/mm squared which meets the claimed limitations of "1000 N/mm<sup>2</sup> or more" or "1200 N/mm<sup>2</sup> or less". EPO '781 is deemed to teach the combination of austenitic steel being less than 0.05% nickel by weight (as already explained in the Office Action mailed 04 April 2007) in addition to the claimed tensile strength (as explained above), which anticipates claims 1, 2, 4, 6, 9, 14 and 16.

Applicant has not specifically addressed/argued the Examiner's § 103(a) rejection with respect to claims 1, 2, 4, 6, 9, 14 and 16 based solely on EPO '781 (as set forth in the Office Action mailed 04 April 2007).

Applicant has not further substantively argued the § 103(a) rejection of claims 18-29 based upon EPO '781 in view of Japan '637. In any case, please refer to the above rejection for explanation as to the specific claim limitations.

For all of the foregoing reasons, the rejection of claims 1, 2, 4, 6, 9, 14, 16 and 18-29 are deemed proper.

Art Unit: 3723

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

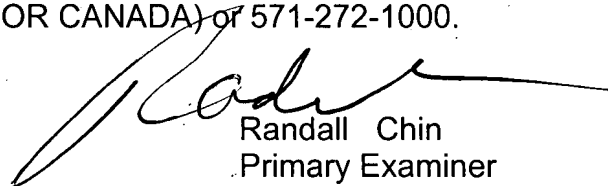
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Randall Chin whose telephone number is (571) 272-1270. The examiner can normally be reached on Monday through Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Hail, can be reached at (571) 272-4485. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3723

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Randall Chin  
Primary Examiner  
Art Unit 1744